

WASHINGTON STATE AVIATION PAVEMENT MANAGEMENT PROGRAM

PRELIMINARY SCOPE OF WORK

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WASHINGTON STATE AVIATION PAVEMENT MANAGEMENT PROGRAM

SCOPE OF WORK DEFINITIONS

WSDOT - References the Washington State Department of Transportation Aviation.

Consultant - References the prime consultant on the project.

FAA - References the Federal Aviation Administration Seattle Airports District Office.

Project Team - References the team members within the WSDOT, FAA and the Consultant.

NPIAS – Refers to the National Plan of Integrated Airport Systems.

WSASP – Refers to the Washington State Airport System Plan.

PCI – Refers to the Pavement Condition Index.

PMMP – Refers to the Pavement Maintenance Management Program.

The coordination of state and federal funding for the Scope of Work is predicated on the receipt of federal funds.

PROGRAM OVERVIEW

The principal objective for developing a statewide pavement maintenance management program is to assess the relative condition of pavements for selected Washington airports in the Washington State Airport System Plan (WSASP) and Federal Aviation Administration (FAA) Airport Improvement Program (AIP). See attachment Exhibit A. The program should develop accurate pavement inventories, identify necessary maintenance, repair, rehabilitation and reconstruction projects, and recommend funding priorities.

The primary function of the Washington State Aviation Pavement Management Program (PMMP) is to serve as a tool in identifying system deficiencies, state programming decisions for federal grant aid, Local Airport Aid program, legislative decision making, and the planning needs of local jurisdictions.

Secondarily, the Program will serve airport sponsors and the FAA in meeting pavement management compliance requirements. As a result of Public Law 103-305, which amends Title 49, section 47105, of the United States Code, the FAA incorporated into all Airport Improvement Program (AIP) grants and additional grant assurance. This assurance, Number 11, requires that any airport sponsor receiving or requesting a grant for a pavement improvement project must have a pavement maintenance-management program. To provide airport sponsors with guidance on developing a pavement maintenance-management program the FAA issued Program Guidance Letter (PGL)95-2. This letter identified four main components required to make up a satisfactory pavement maintenance-management program that included: 1) Pavement Inventory; 2) Inspection Schedule; 3) Record Keeping; and 4) Information Retrieval.

To assist in developing this Program, WSDOT uses MicroPAVER pavement maintenance management software. MicroPAVER uses the inspection results to efficiently identify pavements requiring maintenance, rehabilitation, reconstruction or repair. The software also allows the user to assess overall pavement network condition, to prepare and forecast the budgets required to maintain the network at an acceptable condition level, and to identify required maintenance, rehabilitation, reconstruction and repair activities.

During the process of establishing an Aviation Pavement Maintenance Management Program for the State, certain information is compiled about the pavements at each included airport. The 1999-2000 represents the baseline year in Washington State for most airports. This information includes, at a minimum: pavement location, pavement dimensions, pavement surface type, and last construction date. This information is collected so that each airport's pavements can be divided into manageable units, a process called network definition. Once the network have been defined, pavement inspections can be completed and the Aviation Pavement Maintenance Management Program can be developed.

TASK 1 SYSTEM PAVEMENT INVENTORY AND DATA COLLECTION

In 1999-2000, WSDOT participated in the collection of Pavement Condition Index information at select airports in the WSASP. The WSASP includes all airports within the and Federal National Plan of Integrated Airport System (NPIAS). The information was collected utilizing MicroPAVER Pavement Maintenance Management Software. To support system planning efforts the PCI program assessed individual airports overall pavement condition level, conducted a detailed record review of construction and maintenance activities, and provided recommendations for preserving the pavements within the WSASP and NPIAS.

The airports in the Washington State Aviation Pavement Maintenance Management Program (PMMP) include public use facilities in Washington, with

the exception of a few primary airport facilities which have the technical capability and staff to manage their respective pavement programs.

It is important to note that the role of the state, as an advocate to airports, is not to supplant the role of the airport sponsor. It is not the role of the WSDOT to serve in an enforcement capacity nor is it the role of the WSDOT to bring an airport into compliance with state or federal requirements. That role is reserved for the airport sponsor. The role of the WSDOT is to identify the pavement needs and recommended process of preserving the pavements within the WSASP and NPIAS. The cities, counties and port districts provide the key policy and financial decisions necessary for preserving airport pavements in Washington State.

Task 1.1 Study Design

The airports to be included in the scope of the project consist of commercial service, reliever and general aviation airports. Some primary airports are not included in this scope of work. Based upon this information, the consultant will identify final work products and prepare a final project schedule in conjunction with WSDOT and FAA.

Task 1.2 Records Review

The consultant will obtain the most recent airport layout plan or drawing, therein, for each selected airport site. The consultant will conduct a review of the previous pavement condition reports to obtain relevant information. As well, the consultant will gather data on pavement design, construction and maintenance history from WSDOT, FAA and local airport sponsors, as needed for each selected airport to update the PMMP and to maintain the integrity of the data as directed by the project team. Using AutoCAD, the consultant will update, AutoCAD drawings prepared in the 2000 base-year pavement conditions assessment or develop new drawings, as necessary for each selected airport identifying all pavement boundaries (runway, taxiway and apron), dimensions, cross-sections, dates of construction or most recent major rehabilitation, and surface type.

Task 1.3 Network Definition

Based upon information developed during the Records Review, the consultant will update each airport pavement network as defined in FAA Advisory Circular AC 150/5380-6, Guidelines and Procedures for Maintenance of Airport Pavements. The consultant will utilize the 1999-2000 base-year pavement conditions assessment naming protocol for branches and sections at the selected airport sites in Washington State for baseline consistency, unless

directed otherwise by the project team. Further, the consultant will show branch, section and sample unit locations in relation to the airport layout plans, where applicable.

Task 1.4 Visual Condition Survey

Task 1.4.1 The Pavement Condition Index (PCI) and PMMP will be prepared in accordance with FAA Advisory Circular 150/5380-6 Guidelines and Procedures for Maintenance of Airport Pavements and ASTM D 5340-93, Standard Test Method for Airport Pavement Condition Index Surveys. The consultant will calculate the PCI for each sample unit as well as an average PCI and associated Pavement Condition Rating (PCR) for each pavement section at the selected airports.

Task 1.4.2 The consultant will develop a CAD pavement layout plan showing the Pavement Condition Rating for each pavement section at the selected airports. Further, in conjunction with the project team, the consultant will develop a form to assist the WSDOT and the airport sponsor in conducting pavement inspections. The forms will assist the WSDOT and the FAA in maintaining adequate information regarding pavement maintenance management.

Task 1.4.3 The consultant will develop a digital photo record of each section of branches as necessary to understand the pavement conditions of the section in order to record real-time pavement conditions. The photo record should be stored on a standard CD medium and made available to the airport sponsor, WSDOT, and FAA.

TASK 2 MICROPAVER DATABASE

Task 2.1 MicroPAVER Pavement Maintenance Management Software Implementation

The Aviation Pavement Management Program will be supported by the implementation of the MicroPAVER Pavement Maintenance Management Software. The electronic MicroPaver file shall be furnished to the FAA and WSDOT in 5.1 exported format or most current version.

Task 2.1.1 Development of System Parameters

The consultant, in conjunction with the project team, will develop specific parameters to be used by MicroPAVER for assessing maintenance and repair, rehabilitation and reconstruction needs.

Task 2.1.2 MicroPAVER Data Input for Individual Sites

The consultant will input pavement history and visual condition survey (pavement condition) data into a MicroPAVER database established for each selected airport site.

Task 2.1.3 Database Merger

The consultant will update the pavement conditions report database for each airport and combine all data from the selected airport reports, update and integrate the pavement conditions assessment into the WSASP airport inventory SQL server database, establish 10 (ten) database queries, and update the capital facilities forecast within the WSASP database. The consultant will coordinate with WSDOT MIS administrator on web site and GIS functionality and integration.

Task 2.1.4 Development of MicroPAVER Reports for Individual Sites and Statewide Reports

The consultant will develop MicroPAVER reports, as appropriate, for each selected airport site and for the statewide airport pavement management system. The reports will outline the recommended maintenance, repair, reconstruction and rehabilitation activities for each selected site and the statewide Aviation PMMP.

The report will outline project grouping, construction priority and associated budget for each selected airport and a recommended airport project grouping by region statewide as determined by the project team.

All draft and final pavement study reports shall include documentation, analysis and recommendations on a statewide basis and for each airport, statewide priority project list and capital improvement project forecast for 5 and 10 years.

Task 2.1.5 Database and ArcCAD/ArcView Link Creation

The consultant will create a link in an approved format between the databases for the selected airports, ArcCAD/ArcView and GIS system for visual display of the pavement related data.

Task 2.1.6 MicroPAVER USER, GIS System Training

The consultant will provide training to WSDOT for use of the MicroPAVER software and GIS integration.

TASK 3 PROJECT PRIORITIZATION

Task 3.1 Project Prioritization for Individual Sites

The consultant will develop a recommended five (5) and ten (10) year project prioritization list for each selected airport. The list will identify pavement maintenance, rehabilitation, repair, pavement reconstruction needs and associated budget to support the recommendations. The consultant shall also provide group project recommendations and associated budget. Decisions regarding the actual implementation of the recommended projects or group projects will be made by the airport sponsor and local jurisdiction. For select airports and in review with the WSDOT and FAA, a lifecycle cost and climate maintenance program analysis should be conducted to assist in project grouping recommendations and budget forecast assumptions.

Task 3.2 Project Prioritization for Statewide Aviation Pavement Management Program

The consultant will develop a recommended five (5) and ten (10) year network level analysis on the system of airports to establish system plan and project assumptions and priorities. Project priorities and associated projects need to consider pavement maintenance, rehabilitation, repair, pavement reconstruction needs and the associated budgets to support the recommendations for the statewide aviation PMMP.

TASK 4 PAVEMENT MANAGEMENT PROGRAM COMPENDIUM

Task 4.1 Pavement Management Manuals

The consultant will develop a pavement maintenance management workbook manual for WSDOT, for each selected airport and the project team. The workbook should include guidance on developing a pavement maintenance-

management program and is a how-to-manual on the purpose of the PMMP, PCI identification, data collected and methods, budgeting and other similar information. The consultant shall develop a scope and associated budget for the workbook manual. The final project scope and budget shall be determined by the project team.

Task 4.2 Pavement Inspection Report for Individual Sites

The consultant will provide an inspection report for each selected airport identifying the distress type, severity, and extent observed for each sample unit.

Task 4.3 Pavement Maintenance, Repair, Rehabilitation and Reconstruction Recommendations for each airport.

The consultant will develop and provide to each sponsor a report which describes the study purpose, data collected, a documentation of the pavement condition, and an identification of a recommended pavement maintenance, repair, rehabilitation or reconstruction plan.

Task 4.4 The consultant shall develop a scope of work and budget to hold one or more educational workshops on the PMMP and supporting documentation. The educational workshop should be developed in conjunction with the report, workbook manual and supporting PMMP documents. The final project scope and budget shall be determined by the project team.

TASK 5 PROJECT MANAGEMENT

Task 5.1 Team Meetings

The consultant and WSDOT Aviation will perform timely coordination with the FAA. The consultant will provide the project team with key project issues and process elements through project team meetings. The frequency of the project team meetings will be determined by the consultant or the project team if a need is present. The project team meetings will not exceed 10 meetings over the course of the project. The consultant will be responsible for minutes of project team meetings.

Task 5.2 Preparation of Monthly Status Reports

The consultant will include in each monthly billing a detailed overview noting work accomplished during the billing period, work to date, issues resolved, percentages of work complete, and the work remaining on the project. In compliance with state requirements, the consultant will provide detailed

information documenting the amounts paid to MBE/WBE firms and the work accomplish during the billing period and work accomplished to date.

Further, the consultant will provide a breakdown of costs for work during the billing period, work to date, percentages complete, in comparison to the approved budget according to the task and subtask. The consultant will also provide a breakdown of cost associated with the task budget, FAA share 95%, 5% match, total participating (95% FAA + 5% State), and non-participating (100% State).

Task 5.3 Public Outreach on Study Findings

The consultant will communicate the results, analysis, and recommendations of the pavement conditions assessment through the aviation news service, PowerPoint presentation, electronic newsletter and other means as approved by the project team. Three meeting will be held. One before the RTPO/MPO Coordinating Committee, one before the FAA, and one before constituency groups that is geographically represented. The consultant will be responsible for minutes of public outreach meetings. The results, analysis, and recommendations shall be printed in hardcopy format and pdf format for each airport. The consultant will integrate the individual airport PDF documents in to the WSASP airport inventory database for availability on the WSDOT Aviation internet web site.

TASK 6 PRODUCTS

6.1 Final Products

All draft products shall be reviewed and approved by the FAA and WSDOT Aviation prior to preparation of final pavement study documents and reports. All draft and final pavement study reports shall include documentation, analysis and recommendations on a statewide basis and for each airport, statewide priority project list and capital improvement project forecast for 10 years. The following shall be submitted to the FAA and WSDOT:

Task 6.1.1 Two draft statewide pavement study reports and two pavement study report for each airport shall be prepared. One statewide and one of each of the airport pavement study reports shall be made available to the FAA and WSDOT.

Task 6.1.2 Two final statewide pavement study reports and two final pavement study reports for each airport shall be prepared after draft pavement study is reviewed and approved by the FAA and WSDOT Aviation. One final statewide report and one pavement study report for each airport shall be distributed to the

FAA and one final statewide study report and one pavement study report for each airport to the WSDOT Aviation. The final statewide pavement report and pavement reports for each airport shall be available in pdf format for availability on the WSDOT Aviation web site.

Task 6.1.3 Four digital copies of MicroPAVER files in exportable GIS format and associated AutoCad files.

Task 6.1.4 Copies of the final Pavement Maintenance Management Program Workbook Manual, for airports in Washington State as identified in Task 4.1. shall be made available to each airport, ten (10) copies to WSDOT and (4) copies to the FAA. The Pavement Maintenance Management Program Workbook Manual shall also be available in pdf format on a CD for availability on the WSDOT Aviation web site. A pdf CD file shall be made available to the WSDOT and FAA.

Task 6.1.5 Two (2) copies and an electronic pdf CD file of inspection reports for each selected airport identified in Task 4.2 shall be made available to the WSDOT and FAA.

**Pavement Maintenance Management Program
Exhibit A**

Airport Name	Federal	State
Anderson Field	NPIAS	WSASP
Arlington Municipal	NPIAS	WSASP
Auburn Municipal	NPIAS	WSASP
Blaine Municipal		WSASP
Bowerman Field	NPIAS	WSASP
Bowers Field	NPIAS	WSASP
Bremerton National	NPIAS	WSASP
Cashmere/Dryden	NPIAS	WSASP
Chehalis-Centralia	NPIAS	WSASP
Chelan Municipal	NPIAS	WSASP
Cle Elum Municipal	NPIAS	WSASP
Colville Municipal	NPIAS	WSASP
Concrete Municipal		WSASP
Connel		
Crest Airpark		WSASP
Darrington Municipal		WSASP
Davenport	NPIAS	WSASP
De Vere Field		WSASP
Deer Park Municipal	NPIAS	WSASP
Desert Aire		WSASP
Dorothy Scott Municipal	NPIAS	WSASP
Easton State		WSASP
Elma Municipal		WSASP
Ephrata Municipal	NPIAS	WSASP
Evergreen Field		WSASP
Felts Field	NPIAS	WSASP
Ferry County		WSASP
Firstair Field		WSASP
Fly for Fun		WSASP
Forks Municipal		WSASP
Friday Harbor	NPIAS	WSASP
Goheen Field		WSASP
Goldendale		WSASP
Grand Coulee	NPIAS	WSASP
Grant County International	NPIAS	WSASP
Grove Field	NPIAS	WSASP
Harvey Field	NPIAS	WSASP
Ione Municipal	NPIAS	WSASP
Jefferson International	NPIAS	WSASP
J-Z, City of Almira		
Kelso-Longview	NPIAS	WSASP

Airport Name	Federal	State
Lind Municipal		WSASP
Little Goose State		WSASP
Lopez Island	NPIAS	WSASP
Lynden Municipal	NPIAS	WSASP
Mansfield		WSASP
Martin Airfield		WSASP
Mead Flying Service		WSASP
Methow State	NPIAS	WSASP
Moses Lake Municipal		WSASP
New Warden		WSASP
Ocean Shore Municipal	NPIAS	WSASP
Odessa Municipal	NPIAS	WSASP
Okanogan Legion		WSASP
Olympia	NPIAS	WSASP
Omak	NPIAS	WSASP
Orcas Island	NPIAS	WSASP
Othello Municipal	NPIAS	WSASP
Packwood	NPIAS	WSASP
Pearson Field	NPIAS	WSASP
Pierce County Thun-Field	NPIAS	WSASP
Port of Ilwaco		
Port Orchard		
Prosser	NPIAS	WSASP
Pru Field		WSASP
Pullman/Moscow Regional	NPIAS	WSASP
Quillayute	NPIAS	WSASP
Quincy Municipal		WSASP
Ranger Creek State		WSASP
Renton Municipal	NPIAS	WSASP
Richland	NPIAS	WSASP
Roche Harbor		WSASP
Rogersburg State		WSASP
Rosalia Municipal	NPIAS	WSASP
Sand Canyon		WSASP
Sanderson Field	NPIAS	WSASP

**Pavement Maintenance Management Program
Exhibit A**

Airport Name	Federal	State
Sekiu	NPIAS	WSASP
Sequim Valley (private)		WSASP
Skagit Regional		WSASP
Spanaway		WSASP
Stehekin State		WSASP
Strom Field	NPIAS	WSASP
Sunnyside Municipal		WSASP
Swanson		WSASP
Tacoma Narrows		WSASP
Teledo-Winlock		WSASP
The Dalles-Columbia Gorge	NPIAS	WSASP
Tonasket Municipal	NPIAS	WSASP
Twisp Municipal		WSASP
Vantage (private)		WSASP
Vashon Municipal		WSASP
Vista Field		WSASP
W.M. Fairchild International	NPIAS	WSASP
Waterville	NPIAS	WSASP
Wes Lupien		WSASP
Western Airpark		WSASP
Westport		WSASP
Whidbey Air Park		WSASP
Whitman County Memorial	NPIAS	WSASP
Wilbur Municipal	NPIAS	WSASP
Willapa Harbor	NPIAS	WSASP
Willard Field		WSASP
Wilson Creek		WSASP
Woodland State		WSASP